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EXAMINER	
LEUNG, CHRISTINA Y	
ART UNIT	PAPER NUMBER
2633	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/922,001	HALGREN ET AL.
	Examiner	**Art Unit**
	Christina Y. Leung	2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 03 August 2001.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-26 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-26 is/are rejected.

7)☒ Claim(s) 9,17 and 18 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 03 August 2001 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 6-23-03, 9-15-03, and 5-24-04

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because many of the elements in Figures 1-6 are represented only as blank boxes (such as, but not limited to, elements 116, 118, 120, 122, etc. in Figure 2). The figures should include descriptive as well as numeric labels so that the structures they represent may be readily understood by those in the art.

2. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 9, 17, and 18 are objected to because of the following informalities:

Claim 9 recites the word "insolated" (sic) in line 2 of the claim. Based on Applicants' specification, Examiner respectfully suggests that Applicants amend this word to "insulated," since the specification appears to describe and support a limitation directed to housing walls with insulation (rather than housing walls that are "insolated," i.e., exposed to sunlight).

Claim 17 recites "claims 11" (sic) in line 1 of the claim; this phrase should be changed to "claim 11" for grammatical reasons.

Claims 17 and 18 each recite the word "duel" (sic) in line 2 and line 1 of the claims, respectively. Examiner respectfully suggests that Applicants amend this word to "dual" for grammatical reasons.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 25 is rejected under 35 U.S.C. 102(b) as being anticipated by Swaminathan et al. (US 5,717,712 A).

Regarding claim 25, Swaminathan et al. disclose a laser assembly (Figure 3) comprising:

a semiconductor laser source 320,

a heating unit for heating a junction of the laser source (element 350; column 46-50),

a cooling unit for cooling the junction (again, element 350, since they disclose that this element may be both a cooler and a heating element if necessary; column 3, lines 42-43), and

a control unit 380 for controlling operation of the heating and cooling units, wherein the control unit is arranged, in use, to determine the actual temperature at the junction (using sensor 381) and to compare the actual temperature with a high reference temperature value and a low reference temperature value, and to activate the heating and cooling units based on that comparison (column 3, lines 38-65; column 4, lines 46-51),

a controlled temperature environment around the laser source created and wherein the laser assembly is arranged, in use, in a manner such as to be capable of creating the controlled temperature environment while being subjected to an outside temperature ambient experienced in an OSP situation (Swaminathan et al. specifically disclose that the laser assembly is subjected to an OSP situation; column 1, lines 15-20 and lines 51-55).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dudley (EP 0991217 A2) in view of Okazaki et al. (US 6,285,479 B1).

Regarding claim 22, Dudley discloses a WDM multiplexer structure (Figure 1) comprising

a plurality of laser sources $11_{1\text{-}n}$ for providing optical WDM channel signals wherein a wavelength spacing between the WDM channels is chosen in a manner which ensures that, in use, tolerated wavelength drifts of the laser sources as a result of tolerated temperature variations

are equal to or less than the wavelength spacing (Abstract; column 1, lines 56-57; column 2, lines 1-6; column 3, lines 8-10).

Dudley does not specifically disclose that the WDM multiplexer structure is an add/drop structure, but it is well known in the optical communications art that WDM multiplexed communications systems may include the adding and dropping of wavelength channels. Okazaki et al. in particular teach a system related to the one disclosed by Dudley including WDM communications, and they specifically teach that a WDM multiplexer structure including plurality of laser sources 221a1-a8 (which are connected to multiplexer 223 within adding means 220) for providing optical WDM channel signals may be used in an add/drop structure (Figure 11; column 21, lines 44-55).

It would have been obvious to a person of ordinary skill in the art to use the WDM multiplexer structure disclosed by Dudley in an add/drop structure as taught by Okazaki et al. in order to transmit additional WDM signals into a communication line in an optical network using the advantageously drift-tolerant lasers disclosed by Dudley.

Regarding claim 23, Dudley discloses that the laser sources comprise un-cooled lasers (column 2, lines 2-3).

8. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dudley in view of Okazaki et al. and Cohen et al. (US 6,657,723 B2).

Regarding claim 24, Dudley in view of Okazaki et al. describe a WDM add/drop multiplexer structure as discussed above with regard to claim 22. Dudley does not specifically state that the wavelength division multiplexing in the system is "CWDM" (coarse wavelength division multiplexing). However, Dudley discloses that the channels may be spaced 25 nm apart

(column 2, line 1), and Cohen et al. further teach that wavelength channels having 25 nm spacing conform to specifications for a CWDM system (column 9, lines 26-40).

It would have been obvious to a person of ordinary skill in the art to specifically use the add/drop multiplexer structure described by Dudley in view of Okazaki et al. as a CWDM structure as suggested by Cohen et al. in order to incorporate the structure into a larger CWDM network since the wavelength channels already disclosed by Dudley have a spacing that conforms to a CWDM type network.

9. Claims 1-8, 10-13, 15-18, 20, 21, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamane et al. (US 6,295,147 B1) in view of Swaminathan et al. and Okazaki et al.

Regarding claim 1, Yamane et al. disclose a WDM multiplexer structure (Figures 10 and 27) comprising:

a plurality of WDM laser assemblies (elements 100 shown in Figure 27, but one embodiment of a laser assembly 400 is shown in Figure 10), wherein the WDM structure is arranged, in use, in a manner such that a controlled temperature environment is created around laser sources of the laser assemblies (using thermo-electric control element 6-2; column 16, lines 8-28).

Although Figure 10 shows one transmission apparatus with one laser diode 6-0, Yamane et al. disclose that this apparatus is one of several transmission elements used in a WDM multiplexer structure such as shown in Figure 27 (column 15, lines 60-67; column 16, lines 1-8).

Yamane et al. does not further disclose that the WDM multiplexer structure is subjected to an outside temperature ambient experienced in an Outside Plant (OSP) situation, although they

do suggest an ambient environment outside of the structure since the system includes an ambient temperature supervision circuit 8 (column 16, lines 8-17).

However, it is well understood in the art that some optical communications equipment are located in outside plant situations, as Swaminathan et al. in particular suggest (column 1, lines 12-20). It would have been obvious to a person of ordinary skill in the art to locate the structure disclosed by Yamane et al. in an outside plant environment as suggested by Swaminathan et al. in order to extend the communications network to further locations and serve more users. One in the art would have been particularly motivated to combine the controlled temperature environment already disclosed by Yamane et al. with the outside plant situation suggested by Swaminathan et al. since Yamane et al. particularly disclose being able to advantageously overcome the extreme temperature conditions of outside plant locations.

Further regarding claim 1, Yamane et al. disclose a WDM multiplexer structure, but they do not specifically disclose that this structure is an add/drop structure.

It is well known in the optical communications art that WDM multiplexed communications systems may include the adding and dropping of wavelength channels. Okazaki et al. in particular teach a system related to the one disclosed by Yamane et al. including WDM communications, and they specifically teach that a WDM multiplexer structure including plurality of laser sources 221a1-a8 (which are connected to multiplexer 223 within adding means 220) for providing optical WDM channel signals may be used in an add/drop structure (Figure 11; column 21, lines 44-55).

It would have been obvious to a person of ordinary skill in the art to use the WDM multiplexer structure disclosed by Yamane et al. in an add/drop structure as taught by Okazaki et

al. in order to transmit additional WDM signals into a communication line in an optical network using the advantageously temperature-controlled laser assemblies disclosed by Yamane et al.

Regarding claim 26, for the reasons discussed with regard to claim 1, Yamane et al. in view of Swaminathan et al. and Okazaki et al. describe an WDM network incorporating a WDM add/drop multiplexer structure as claimed in claim 1, especially since Yamane et al. already disclose a WDM multiplexing structure that allows a network of users to communicate.

Regarding claim 2, Yamane et al. do not explicitly refer to a low reference temperature value and a high reference temperature value. However, Yamane et al. clearly disclose that the controlled temperature environment is defined by a desired "reference" temperature value (column 16, lines 52-59). It would be well understood in the art that this reference value disclosed by Yamane inherently establishes a low reference (a value just below the disclosed desired reference) and a high reference (a value just above the disclosed desired reference), and therefore, Yamane et al. inherently define low and high values for the controlled temperature environment.

Regarding claim 3, again, Yamane et al. do not specifically disclose an add/drop structure, but Okazaki et al. in particular teach a system related to the one disclosed by Yamane et al. including a WDM multiplexer structure used in an add/drop structure (Figure 11; column 21, lines 44-55). Okazaki et al. further teach that the add section 220 of the add/drop structure may further include WDM filters 226 that are temperature sensitive. In particular, Okazaki et al. disclose controlling the filters 226 using a wavelength setting control circuit (not explicitly shown in Figure 11, but disclosed in column 21, lines 64-67; details of the wavelength setting

control circuit are shown in Figure 4 and include controlling a filter like filter 221 on the basis of temperature; column 10, lines 57-67; column 11, lines 1-3; column 12, lines 5-18).

Given the add/drop multiplexer structure already described by Yamane et al. in view of Swaminathan et al. and Okazaki et al. as discussed above with regard to claim 1, it would have been obvious to a person of ordinary skill in the art to further include other temperature sensitive devices such as the filters taught by Okazaki et al. in order to ensure the correct wavelength output of the laser transmitters. It also would have been obvious to a person of ordinary skill in the art to control the temperature environment around the filters as well in order to ensure proper operation of the filters, since Okazaki et al. further teach that the filters are sensitive to temperature. One in the art would have been particularly motivated to extend the temperature-controlled environment already disclosed by Yamane et al. to the filters of the system now suggested by Yamane et al. in view of Swaminathan et al. and Okazaki et al. because Yamane et al. is already directed to ensuring the proper output of the laser transmissions.

Regarding claim 4, Yamane et al. disclose that the WDM add/drop structure comprises one or more housings in which the laser assemblies are located (they disclose that each laser source is located in a housing; column 16, lines 17-23), and an active temperature controlling device (thermoelectric control element 6-2) arranged, in use, to heat an inside of the housings based on a measured temperature (obtained using thermistor 6-1, for example) and a temperature reference value (column 16, lines 47-59).

Further regarding claim 4, as similarly discussed with regard to claim 2, Yamane et al. do not explicitly refer to a "low" reference temperature value, but they clearly disclose that the controlled temperature environment is defined by a desired "reference" temperature value

(column 16, lines 52-59). It would be well understood in the art that this reference value disclosed by Yamane inherently establishes a low reference (a value just below the disclosed desired reference) and therefore, Yamane et al. inherently establish a low value for comparing the measured temperature against.

Regarding claim 5, Yamane et al. disclose that the measured temperature may be the actual temperature inside the housings (measured inside the housing by thermistor 6-1).

Regarding claims 6 and 7, Yamane et al. also disclose that the measured temperature may be an ambient temperature around the housing measured outside the WDM add/drop multiplexer structure (measured outside the housing by ambient temperature supervision circuit 8; column 17, lines 1-10).

Regarding claim 8, Yamane et al. disclose that the temperature controlling device 6-2 is further arranged, in use, to cool the housings based on the measured temperature (obtained using thermistor 6-1, for example) and a reference temperature value (column 16, lines 47-59).

Further regarding claim 8, as similarly discussed with regard to claim 4, Yamane et al. do not explicitly refer to a "high" reference temperature value, but they clearly disclose that the controlled temperature environment is defined by a desired "reference" temperature value (column 16, lines 52-59). It would be well understood in the art that this reference value disclosed by Yamane inherently establishes a high reference (a value just below the disclosed desired reference) and therefore, Yamane et al. inherently establish a high value for comparing the measured temperature against.

Regarding claim 10, Yamane et al. further disclose heat-generating components of the laser assemblies such as control circuitry 9 and other elements located outside of the housing but

arranged with suitable connections to the laser sources (elements 6-0) located inside the housing (as shown in Figure 10, for example). It is well understood in the art that electrical circuitry components and controller circuits such as disclosed by Yamane et al. generate some amount of heat in use.

Regarding claim 11, Yamane et al. in view of Swaminathan et al. and Okazaki et al. describe a system as discussed above with regard to claim 1.

Yamane et al. further disclose that each laser assembly (Figure 10) comprises:

a semiconductor laser source 6-0,

a heating unit for heating a junction of the semiconductor laser source (element 6-2),

a cooling unit for cooling the junction (also element 6-2), and

a control unit (automatic temperature control circuit 7) for controlling operation of the heating/cooling units,

wherein the control unit is arranged, in use, to determine the actual temperature at the junction and to compare the actual temperature with a reference temperature value, and to selectively activate heating or cooling based on that comparison (column 16, lines 47-59).

to selectively activate the heating and cooling units

Yamane et al. disclose a thermoelectric control element 6-2 capable of performing heating and cooling as needed (column 16, lines 28-39). Examiner notes that Applicants' claim 17 further recites that the heating unit and the cooling unit recited in claim 11 may be implemented as a "duel function"(sic) unit; Yamane et al. disclose such a dual function unit.

Regarding claim 12, Yamane et al. disclose that the control unit 6-2 is arranged to activate the heating unit when the actual temperature falls below the desired temperature value

and to activate the cooling unit when the actual temperature increases above the desired temperature value (column 16, lines 29-59). Again, Yamane et al. do not explicitly disclose a "low" reference and a "high" reference, but they clearly disclose that the controlled temperature environment is defined by a desired "reference" temperature value (column 16, lines 52-59). It would be well understood in the art that this reference value disclosed by Yamane inherently establishes a low reference and a high reference and therefore, Yamane et al. inherently establish low and high values for comparing the measured temperature against with regard to heating or cooling.

Regarding claim 13, Yamane et al. disclose that the laser assembly further comprises a driver unit (automatic current control circuit 9) arranged, in use, to regulate a bias current of the semiconductor laser source to compensate for variations in a power output of the semiconductor laser source as a result of a tolerated temperature range of the controlled temperature environment (column 17, lines 11-19; column 19, lines 45-65).

Regarding claim 15, Yamane et al. disclose that the driver unit may be arranged, in use, to regulate the bias current based on the actual power output of the semiconductor laser source (column 17, lines 15-19).

Regarding claim 16, Yamane et al. disclose that the driver unit 9 is further arranged, in use, to provide a modulation current to the semiconductor laser source. Although Yamane et al. do not specifically use the word "modulation" in their specification, they clearly disclose that each laser outputs an optical signal with data based on an electric signal provided by the driver unit 9 (column 10, lines 43-47; column 19, lines 55-60); it would be well understood in the art

that the driver unit 9 disclosed by Yamane et al. therefore provides a modulation current to the laser.

Regarding claims 17 and 18 in particular, Yamane et al. further disclose that the heating unit and cooling unit of each laser assembly are implemented as a dual function heating/cooling unit comprising a TE device (thermoelectric [TE] control element 6-2).

Regarding claims 20 and 21, Yamane et al. in view of Swaminathan et al. and Okazaki et al. describe a system as discussed above with regard to claims 1 and 2. Yamane et al. do not specifically disclose that the high reference temperature is at least 70C or that the low reference temperature is 0C or less.

However, regarding claim 20 in particular, Swaminathan et al. further teach that in an outside plant environment, a laser may be controlled to a range where a high reference temperature is over 70C (specifically, Swaminathan et al. refers to 80C as a reference temperature; column 4, lines). Regarding claim 21 in particular, Swaminathan et al. also further teach that in an outside plant environment, a laser may be controlled to a range where a low reference temperature is 0C (column 3, lines 29-30).

It would have been obvious to a person of ordinary skill in the art to specifically provide a high reference temperature that is at least 70C as taught by Swaminathan et al. in the system described by Yamane et al. in view of Swaminathan et al. and Okazaki et al. in order to provide a practical high temperature limit that would still allow the lasers to function properly (while accommodating the higher temperatures that may be commonly experienced by the lasers in an outside plant environment). Similarly, it would have been obvious to a person of ordinary skill in the art to specifically provide a low reference temperature that is 0C or below as taught by

Swaminathan et al. in the system described by Yamane et al. in view of Swaminathan et al. and Okazaki et al. in order to provide a practical low temperature limit that would still allow the lasers to function properly (while accommodating the lower temperatures that may be commonly experienced by the lasers in an outside plant environment).

10. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamane et al. in view of Swaminathan et al. and Okazaki et al. as applied to claim 8 above, and further in view of Meyer et al. (US 6043456 A).

Regarding claim 9, Yamane et al. in view of Swaminathan et al. and Okazaki et al. describe a system as discussed above with regard to claim 8 including a temperature controlling device and a housing, but they do not specifically disclose that the housings comprise thermally insulated walls. However, Meyer et al. particularly teach that in a system for providing temperature control to a laser element within a housing, it would be advantageous to ensure that the housing was thermally insulated so that the temperature controlled environment within the housing would stay at that temperature (column 7, lines 8-13). Therefore, it would have been obvious to a person of ordinary skill in the art to insulate the walls as taught by Meyer of the housing in the system described by Yamane et al. in view of Swaminathan et al. and Okazaki et al. in order to preserve the temperature controlled environment around the laser componenets.

11. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamane et al. in view of Swaminathan et al. and Okazaki et al. as applied to claim 13 above, and further in view of Kasper et al. (US 5,740,191 A).

Regarding claim 14, Yamane et al. in view of Swaminathan et al. and Okazaki et al. describe a system as discussed above with regard to claim 13 including a driver unit that

regulates a bias current, but they do not specifically disclose that the driver unit regulates the bias current based on the actual temperature of the laser.

However, Kasper et al. teach a system related to the one described by Yamane et al. in view of Swaminathan et al. and Okazaki et al., including a temperature controlled environment around a laser (column 1, lines 61-65) and a driver unit that regulates a bias current of the laser (column 1, line 67; column 2, lines 1-3). Kasper et al. further teaches that the driver unit is arranged to control a bias current of the laser based on the actual temperature measured at the laser (column 3, lines 36-41). It would have been obvious to a person of ordinary skill in the art to regulate the bias current based on the laser temperature as taught by Kasper et al. in the system described by Yamane et al. in view of Swaminathan et al. and Okazaki et al. in order to provide a suitable bias current value based on temperature conditions and thereby further tune the inputs to the laser in response to changes in the temperature.

12. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamane et al. in view of Swaminathan et al. and Okazaki et al. as applied to claim 2 above, and further in view of Dudley.

Regarding claim 19, Yamane et al. in view of Swaminathan et al. and Okazaki et al. describe a system as discussed above with regard to claim 2 including an add/drop structure as taught by Okazaki et al.. Again, Yamane et al. do not specifically disclose an add/drop structure, but Okazaki et al. in particular teach a system related to the one disclosed by Yamane et al. including a WDM multiplexer structure used in an add/drop structure (Figure 11; column 21, lines 44-55). Okazaki et al. further teach WDM filters (such as filters 212 in the drop section 210 of the add/drop structure shown in Figure 11).

As already discussed above with regard to claim 1, it would have been obvious to a person of ordinary skill in the art to use the WDM multiplexer structure disclosed by Yamane et al. in an add/drop structure as taught by Okazaki et al. in order to transmit additional WDM signals into a communication line in an optical network using the advantageously temperature-controlled laser assemblies disclosed by Yamane et al.

Thus, Yamane et al. in view of Swaminathan et al. and Okazaki et al. describe a system including an add/drop structure with a plurality of WDM filters,, but they do not further suggest that wavelength drifts are limited to a drift value equal to or less than a pass band of the WDM filters.

However, Dudley discloses a WDM multiplexer structure (Figure 1) comprising a plurality of laser sources $11_{1\text{-}n}$ for providing optical WDM channel signals wherein a wavelength spacing between the WDM channels is chosen in a manner which ensures that, in use, tolerated wavelength drifts of the laser sources as a result of tolerated temperature variations are equal to or less than the wavelength spacing (Abstract; column 1, lines 56-57; column 2, lines 1-6; column 3, lines 8-10).

It would have been obvious to a person of ordinary skill in the art to further ensure that the drifts in the lasers in the system suggested by Yamane et al. in view of Swaminathan et al. and Okazaki et al. are limited to a drift value equal to or less than a pass band of the WDM filters such as taught by Dudley, so that the signals of different wavelengths do not overlap and therefore may be properly received.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Y. Leung whose telephone number is 571-272-3023. The examiner can normally be reached on Monday to Friday, 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571-272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christina Y Leung
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